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## Notes on birds from the Cape Verde Islands in the collection of the Centro de Zoologia, Lisbon, with comments on taxonomy and distribution

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A comprehensive overview of all taxa of birds reliably recorded in the Cape Verde Islands, with details on inter- and intra-island distribution, breeding, migration and taxonomy (including data up to 1994), was presented by Hazevoet (1995). In preparation for that work, the major collections of Cape Verde birds in the U.K. and U.S.A. were studied but, so far, there had been no opportunity to study the Cape Verde collection at the Centro de Zoologia of the Instituto de Investigação Científica Tropical (I.I.C.T.) in Lisbon. Specimens in this collection were listed by Frade (1976) and data in Hazevoet (1995) were taken from that paper. This included several 'first records', as well as data on rare migrants and endemics. Frade (1976) listed specimens by island but did not give within-island collecting localities. Moreover, some parts of his paper were not entirely clear or warranted further confirmation of the specific identity of some specimens.

During a visit to the Centro de Zoologia in June 1997, I had the opportunity to study the collection of birds from the Cape Verde Islands. Most of these (c. 400 specimens) were collected by Sr. Jaime Vieira dos Santos during three autumn visits in 1969, 1970, and 1972. Collections were made throughout the archipelago, except for the islands of Santa Luzia, Sal, and Boavista. In addition, there are c. 25 specimens collected on various islands by Father René de Naurois in 1965 and 1968. Some of the latter, but not all, were included by Frade (1976). In most cases, within-island collecting localities were given on the specimen labels (as well as in the collection catalogue) and it has now been possible to establish these as well as to verify the identity of the rarer taxa, some of which proved to have been misidentified by Frade (1976).

### Notes on selected taxa

Unless stated otherwise, general data on distribution, population size, breeding, number of records, etc. in the following are taken from

Hazevoet (1995) and supplements to that work (Hazevoet *et al.* 1996, Hazevoet 1997). Abbreviations: AMNH—American Museum of Natural History, New York; BMNH—The Natural History Museum, Tring; CZL—Centro de Zoologia, Instituto de Investigação Científica Tropical, Lisbon; MNHN—Muséum National d'Histoire Naturelle, Paris; YPM—Peabody Museum of Natural History, Yale University, New Haven, Conn.; ZMA—Zoologisch Museum, University of Amsterdam.

#### CAPE VERDE PETREL *Pterodroma feae*

A female taken at the nest at Rui Vaz (altitude *c.* 600 m), Santiago, 15 February 1968 (CZL 68 001), was not listed by Frade (1976). A male, taken at the same locality and date, is in the BMNH. These are the only known specimen records from Santiago, where it has been found breeding in the central mountain range (Serra do Pico da Antónia) during the 1960s. If it still occurs there, numbers are apparently small as there have been no reports from Santiago since. Elsewhere in the Cape Verde Islands, breeding of this rare and endangered taxon has been documented for the islands of Fogo, Santo Antão, and São Nicolau. Although difficult to establish, the total population is estimated to range between 500 and 1000 pairs.

The CZL specimen lacks a breast band, the absence of which has often been taken as a good field mark of *P. feae* [*sensu lato*, i.e. *feae* (Cape Verdes) and *deserta* (Bugio islet, off Madeira)], distinguishing it from *P. mollis* of the southern oceans (e.g. Enticott 1991, Gantlett 1995). However, a male *P. feae* in YPM, collected at the breeding grounds on São Nicolau, has a virtually complete grey breast band. On the other hand, the breast band in *P. mollis* may be rather incomplete in some individuals (Clancey *et al.* 1981, Zonfrillo 1994) and field identification of *P. feae*, solely based on the absence or presence of a breast band, must be considered unreliable.

Mathews (1934) separated *deserta* from *feae* on account of differences in the means of various morphometrics, without specifying the number of specimens measured or designating a type specimen. Measurements of the CZL specimen (wing 269 mm, tarsus 33 mm, bill 30 mm, maximum bill height 13.5 mm) are within the ranges of both the Cape Verde and Bugio populations (*cf.* Bourne 1957, Jouanin *et al.* 1969, Cramp & Simmons 1977, Zino & Zino 1986). No qualitative morphological characters, diagnostic of either *feae* or *deserta*, have been described and the Cape Verde and Bugio populations have traditionally been treated as conspecific (e.g. Cramp & Simmons 1977, Jouanin & Mougín 1979, Bourne 1983). However, divergence in molecular or behavioural characters (e.g. display vocalizations) has not been investigated so far. Gadfly petrels are highly philopatric, but share similar life styles away from the breeding grounds, and taxon specific genetic and reproductive characters are likely to develop before differences in external morphology. Until these lines of evidence have been investigated, 'lumping' of *feae* and *deserta* into a single 'polytypic species' is premature and unwarranted. Such data may also shed further light on the phylogeny of the monophyletic group of North

Atlantic gadfly petrels (*madeira*, *feae*, *deserta*, *cahow*, *hasitata*, and probably also—presumably extinct—*caribbaea*). Contrary to the suggestion contained in traditional classification, this clade is not closely related to *P. mollis*, with which it does not even share a sister-group relationship (*cf.* Hazevoet 1997).

#### CAPE VERDE SHEARWATER *Calonectris edwardsii*

Hazevoet (1995) listed the island of Santo Antão among the taxon's breeding localities, based on 'four juveniles' collected there in November 1968, and referring to Frade (1976) as the source of this information. However, Frade (1976) in fact only listed two males and two females (without commenting on age) collected on Santo Antão in November 1972. The specimens (CZL 72 039, 041, 043, 048) are in fact of adults collected offshore and, therefore, do not provide an indication of breeding on Santo Antão. Although 'cagarras' were locally reported to breed on the island in 1988–1990, this may refer to Cape Verde Little Shearwater *Puffinus boydi* (a breeding bird of Santo Antão), which fishermen sometimes refer to by the same name. At present, there is no other indication of breeding of *C. edwardsii* on Santo Antão. Main breeding sites are found on the island of Brava and the islets of Raso and Branco, with smaller colonies on some of the other islands, and a total population estimated at *c.* 10,000 pairs at most. This endemic species suffers great losses from local fishermen, who take thousands of young each year.

#### RED-BILLED TROPICBIRD *Phaethon aethereus*

Three specimens (CZL 69 248–250) collected on Brava, 23 October 1969, were taken at Ponta do Incenso, along the northeastern coast of the island. The only recent information of breeding on Brava was of a colony near Porto dos Ferreiros, along the southwestern coast, during the 1980s. In view of the specimens collected at Ponta do Incenso in 1969, breeding may still occur along the northern coast as well. The population of *P. aethereus* in the Cape Verdes is under heavy pressure from human depredation and the number of colonies, as well as the number of pairs within colonies, have decreased dramatically over the past century and only 100–125 pairs remain today. Outside the Cape Verdes, the only breeding site along the Atlantic coasts of Africa is at the Iles de la Madeleine, off Dakar, Senegal (Brown *et al.* 1982, Morel & Morel 1990).

#### LITTLE BITTERN *Ixobrychus minutus*

An unsexed juvenile (CZL 69 230), collected at Vila Nova Sintra, Brava, 17 October 1969, constitutes the only record for the Cape Verde Islands. It was assigned to Afrotropical 'subspecies' *payesii* by Frade (1976), who did not give reasons for this taxonomic allocation. Examination of the specimen did not reveal any characteristics that would justify Frade's decision. In plumage as well as in measurements the bird is indistinguishable from nominate *minutus*. Wing (150 mm) and tarsus (45.5 mm) measurements are within the ranges of both male and female *minutus* (*cf.* Cramp & Simmons 1977, Brown *et al.* 1982;

specimens in ZMA). Its somewhat short bill (44.5 mm) is within the range of females but may also be due to the bird being a juvenile. The blackish feathers on the sides of the breast may be indicative of a male. Cramp & Simmons (1977) stated that p10 is distinctly shorter than p9 in *payesii*, but this is not the case in the specimen concerned. According to Chapin (1932), the distance from the tip of the innermost primary to the end of the longest primary is 46–47 mm in *minutus*, but only 29–34 mm in *payesii*. The difference in length between p10 and p1 in five juvenile *minutus* in ZMA shows no difference with that of the Cape Verde specimen, in which it measures 46 mm. It is therefore concluded that the bird from Brava concerns a northern migrant of 'subspecies' *minutus*. Little Bittern is believed to be a widespread winter visitor in West Africa but, due to its skulking habits, its distribution is poorly known. In Senegal, however, the large majority of birds examined in the hand showed to be northern *minutus* rather than Afrotropical *payesii* (Morel & Morel 1990, Rodwell *et al.* 1996).

#### INTERMEDIATE EGRET *Egretta intermedia*

Frade (1976) listed four specimens collected on Santo Antão in October–November 1972. These birds (CZL 72 023, 025, 049, 056), taken at different localities on the island, are in fact Little Egrets *E. garzetta* (a widespread Cape Verde resident), correctly labelled and catalogued as such in the collection. A specimen taken at the Pedra Badejo lagoons, Santiago, 11 January 1965 (CZL 65 032), also listed by Frade (1976), is indeed *E. intermedia*. Intermediate Egret is a rare Afrotropical migrant visitor to the Cape Verde Islands. Up to 1996, there are now four records (involving eight or nine birds) from the islands of Santiago (2), Sal (1), and Boavista (1), all at lagoons and salt pans.

#### CAPE VERDE PURPLE HERON *Ardea bournei*

Frade (1976) listed seven specimens taken in September 1969. One of these, although listed in the CZL catalogue, could not be found in the collection. An adult male (CZL 69 091) and the missing female ('69' of Frade but catalogued as CZL 69 090) were collected at the Boa Entrada colony, while another male (CZL 69 144) was taken at the Pedra Badejo lagoons. Interestingly, one male, one female, and two unsexed birds (CZL 69 132–135), were collected at the São Domingos colony. These constitute the last documented records from this former and largest known breeding site, which, according to local informants, disappeared in the early 1970s when the nest-trees were felled. Today, only two breeding sites are known to remain (each situated in a single tree), at Boa Entrada (Santa Catarina region) and at Banana (Ribeira Montanha). The total population of this highly endangered Santiago endemic does not exceed *c.* 20 pairs.

#### CAPE VERDE KITE *Milvus fasciicauda*

Frade (1976) listed two specimens from the island of Santo Antão as well as two from São Nicolau. However, in the collection only one female (CZL 72 028) from Santo Antão, collected 28 October 1972,



could be found, while there are two females and one male (CZL 68 004, 70 040, 70 056) from São Nicolau, collected 25 March 1968, 21 October 1970, and 2 November 1970, respectively. The Cape Verde Kite is probably extinct on São Nicolau, there being no records since those from 1968–1970 listed above. Nowadays, Santo Antão is the only remaining refuge of this endemic taxon, but numbers are dwindling on that island too. No direct persecution seems to take place, but this scavenger takes poisoned bait laid in attempts to control feral dogs (Hazevoet 1997). If this practice does not stop soon, this endemic raptor may become extinct.

#### COMMON KESTREL *Falco tinnunculus*

A juvenile male (CZL 72 004), collected at Porto Novo, Santo Antão, 20 October 1972, has a wing length (231 mm) far exceeding that of local *F. neglectus*, the latter being endemic to the northwestern island group (Santo Antão, São Vicente, Santa Luzia, Branco, Raso, São Nicolau). Wing measurements of male *F. neglectus* are distinctly smaller, viz. 190–212 mm ( $n=16$ ; specimens in AMNH, CZL, YPM), while the upperparts, underparts and wing in *neglectus* are very heavily barred and streaked on a pale ground in both sexes. The Santo Antão specimen differs from *F. alexandri* (the other kestrel of the Cape Verdes, endemic to the eastern and southern islands of Sal, Boavista, Maio, Santiago, Fogo, and Brava, but not known from the northwestern islands) in its longer wing and its less heavily barred and streaked upperparts and tail (wing length of 23 male *alexandri* ranged 210–226 mm; specimens in AMNH, CZL, YPM). In plumage characters and measurements, the specimen from Santo Antão is indistinguishable from first year *F. tinnunculus* of European populations (specimens in ZMA). Previously, there was only one record of *F. tinnunculus* for the Cape Verde Islands, viz. an immature male collected on Sal, 10 March 1924 (AMNH).

De Naurois (1987) listed a male kestrel (with wing length of 231 mm) collected at Porto Novo, Santo Antão. He mentioned that this was “collecté par moi-même”, but did not give details on collecting date or the collection where the specimen is kept. The CZL specimen from Santo Antão discussed above was doubtless collected by Sr. Jaime Vieira dos Santos. It seems likely that de Naurois handled the same specimen (he has been a regular visitor to the Centro de Zoologia) and that his statement about the collector's identity is erroneous. There is no kestrel from Santo Antão resembling the one reported by de Naurois (1987) in MNHN, where the majority of de Naurois' specimens are kept (E. Pasquet *in litt.*).

#### CAPE VERDE CANE WARBLER *Acrocephalus brevipennis*

Frade (1976) listed three specimens, viz. two from Santiago (CZL 69 097, 117) and one from Brava (CZL 69 243). The latter, collected at Braga (in the north of the island), 21 October 1969, constitutes the last documented report for the island of Brava. A fourth (male) specimen in the collection (CZL 70 008), taken at Ribeira da Queimada, São Nicolau, 21 October 1970, was not mentioned by Frade (1976).

Previously, there were no records from São Nicolau after 1924. Surveys in the years 1963–1968 (R. de Naurois *in litt.*) and 1986–1996 (CJH) did not locate any and the taxon was presumed extinct on São Nicolau, the type locality of *A. brevipennis* (cf. Hazevoet 1993). However, it was present on São Nicolau in 1970 and small numbers were found there in 1998 (Hazevoet 1999). Further surveys should be carried out to establish whether it survives on Brava. Historically, the Cape Verde Cane Warbler is only known from the islands of São Nicolau, Brava, and Santiago. The total population on Santiago is estimated not to exceed c. 500 pairs.

#### SPANISH SPARROW *Passer hispaniolensis*

Hazevoet (1995) stated that there were no records from the island of São Nicolau between 1897 and 1982. This is obviously due to a mistake because Frade (1976) mentioned three specimens (CZL 70 010, 051, 052), collected on São Nicolau in October 1970. In addition, there is a fourth specimen (CZL 70 001) from the same island and date, not listed by Frade (1976). The single specimen record (CZL 72 046), constituting the only firm evidence of Spanish Sparrow's occurrence on the island of Santo Antão, was taken at Ponta do Sol (in the extreme northwest of the island), 5 November 1972. Frade (1976) listed three specimens collected on the islet of Branco. The species had not been recorded from Branco on any previous occasion and Hazevoet (1995) suggested that Frade's (1976) listing was perhaps in error for *P. iagoensis* (see below). However, there are in fact five specimens of *P. hispaniolensis* (CZL 70 108, 109, 109B, 110, 111A), labelled and catalogued as being collected on Branco, 8 November 1970. This indicates that stray birds sometimes visit this uninhabited and rocky islet. Although common and widespread in the eastern and southern islands of Boavista, Maio, Santiago, Fogo, and Brava, its occurrence elsewhere in the archipelago appears to be rather irregular and is probably subject to nomadic movements, presumably in connection with erratic local rainfall.

#### IAGO SPARROW *Passer iagoensis*

There are two specimens (CZL 70 110, 111), collected on the islet of Branco, 8 November 1970, not listed by Frade (1976). Apparently, some double numbering has taken place (see *P. hispaniolensis* above) and this may have been the cause of Frade's (1976) omission. There are only a few records of *P. iagoensis* from Branco, although this endemic taxon is common on the nearby islet of Raso as well as on all other islands except Fogo.

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